

*In the claims:*

*Please cancel claims 1-12 without prejudice to their filing in subsequent continuation applications.*

*Please add the following new claims:*

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13. A method for acquisition, storage, and retrieval of cell screening data on a computer system, comprising the steps of :

- a) providing a plate containing wells;
- b) storing input parameters used for screening of the plate in a database;
- c) repeating steps (i)-(ix) for a desired arrays of wells:
  - i) selecting an individual well on the plate;
  - ii) collecting image data from the well;
  - iii) storing the image data in the database;
  - iv) collecting feature data from the image data;
  - v) storing the feature data in the database;
  - vi) calculating well summary data using the image data and the feature data collected from the well;
  - vii) storing the well summary data in the database;
  - viii) calculating plate summary data using the well summary data from the database; and
  - ix) storing the plate summary data in the database.



14. A computer readable medium having stored therein instructions for causing a computer to execute the method of Claim 13.
15. The method of Claim 13 wherein the wells include cells treated with a test compound.
16. The method of Claim 13 wherein the plate comprises a microplate.
17. The method of Claim 13 wherein the database includes microplate data.
18. The method of Claim 13 wherein the database includes photographic image data.
19. The method of Claim 13 wherein the database includes cell feature data.
20. The method of claim 19 wherein the database includes photographic image data.
21. The method of Claim 20 wherein the database includes cell feature data.
22. The method of Claim 20 wherein the database includes cell feature data.
23. The method of claim 13 wherein the input parameters used for screening of the plate include parameters for one or more of the following: identifying nuclei; identifying cytoplasm; identifying fluorescent reagents; cell selection settings, number of cells to be analyzed per well, and range of size, shape, and intensity of cells to be analyzed.
24. The method of claim 13 wherein the feature data include collecting one or more of: size, shape, intensity, location, area, perimeter, height, width, total fluorescence intensity, average fluorescent intensity, ratio of fluorescent intensities, difference in fluorescent intensities, and number.
25. The method of claim 24 wherein the step of collecting well summary data includes calculating one or more of size, shape, intensity, location, area, perimeter, height, width, total fluorescence intensity, average fluorescent intensity, ratio of fluorescent intensities, difference in fluorescent intensities, and number.